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Survey conducted by questionnaire to deans and faculties of selected colleges and universities in Western States. Purposes were: (1) To discover current practices as to class size, 2) to obtain respondent's views about variables associated with class size, (3) to ascertain variables affecting class size and their relationship to the teaching process and the learning process, and (4) to determine from current practices whether a plan for class size could be formulated to serve as a guide to administrators for provision of physical facilities to accommodate future increased enrollments.

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RELATIONSHIP OF CLASS SIZE TO EFFECTIVENESS OF TEACHING

A Study Conducted

by

Eastern Oregon College

La Grande, Oregon

at the request of

The Western Interstate Commission

for Higher Education

University of Colorado

Boulder, Colorado

ED000582

1959-1960

BACKGROUND FOR THE STUDY

In the spring of 1959, a request from the Western Interstate Commission for Higher Education was received for the possibility of Eastern Oregon College undertaking an institutional research study on an important issue. Institutional research as defined by this Commission is for the collection of data for self-study purposes which might be used in preparing the budget, assigning space, and planning the educational program. The specific institutional research assigned to Eastern Oregon College was the Relationship of Class Size for Effectiveness of Teaching.

Colleges already find that an era of soaring enrollments has arrived. While some colleges and individuals approach this phenomenon with the suggestion of limited enrollments and higher standards of admission, others for several years have endeavored to study present methods of instruction against the potentialities of other methods. When faced with an era of rapid and continued growth of student enrollments, an indication that colleges may anticipate a shortage of well qualified college professors in most disciplines, and fear that financial support to institutions of higher learning (public and private) will not keep pace with increased enrollments, it seems obvious that a change in class size, in the direction of larger classes, is a possible and probable adjustment of solution. Such a change in class size precipitates two most important problems: (1) In what ways is effective teaching related to class size and to the method of instruction?, and (2) What is the basis of the strong preference for small class groups by both faculty and students, which leads through inertia to little experimentation?

Toward the goal of improving the large group teaching techniques and to capture the claimed advantages of small group instruction for the large class, much experimentation in the last thirty years has sought to discover means of making large class teaching more effective. In the current periodical literature, there is abundant evidence that such problems have stimulated several inquiries--some with very extensive goals and sizable budgets. The methods of inquiry and the interpretations of the results are as varied as the number of studies. The reader of the literature is impressed by the number of variables recognized in effective teaching techniques and by the necessary compound nature of the experiments.

The institution undertaking this particular study does not have a large student body, which might necessitate multiple sections of courses enrolling hundreds of students. Thus it seemed unwise, if not impossible, to consider establishing experimental and control groups to study an aspect or variable related to class size, teaching effectiveness, or method of instruction.

Therefore, the committee preparing this study pursued a plan to find the attitudes of deans and selected faculty members from undergraduate schools in several western states toward class size and effective teaching conditions and techniques. The committee accepted the multiple variables associated with this problem and submitted many of the variables to the above individuals to ascertain their attitudes toward class size and effective teaching and toward variables recognized by other researchers. (The committee was composed of Dr. Martha Addy, Professor of Education, Dr. W. Douglas Spear, Associate Professor of Political Science, and Dr. Sarah C. Stein, Associate Professor of Secretarial Science.)

It is important to recognize the attitudes of faculties and administrators toward class size and its related problems. It is expected that such attitudes will vary with the nature of the institution of higher education--state supported or privately endowed, with the size of the institution--large or small, with the purposes of the institution--liberal arts or professional, and with the traditional practices of the institution--small classes or experimentation with varied class size.

PURPOSES OF THE STUDY

The purposes of the survey on class size, conducted by a questionnaire to deans and faculties of selected colleges and universities in western states of California, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming included the following:

1. To ascertain the current practices as to the size of classes in the colleges and universities that answered the questionnaire.

2. To ascertain what the respondents to the questionnaire believed about the variables associated with class size.

3. To ascertain the variables that affect the size of classes and their relationship to the (a) teaching process and (b) the learning process.

4. To determine from the current practices and beliefs whether a feasible plan for class size could be formulated to serve as a guide to the administrators for provision of physical facilities to accommodate future increased enrollments.

REVIEW OF RESEARCH LITERATURE

Early experimental and objective research done during the late twenties to the early forties resulted in the findings that the class size itself is of no importance in giving students an opportunity to acquire knowledge, measured by their standing on objective examinations. This research showed that there was no significant difference in the achievement between matched students in small classes and large classes. A slight difference was in favor of the large class. However, most faculty members and many students said they had a strong preference for small classes. The results furnished a basis for the belief that more experimentation should be done with small classes in order to really discover if they were superior to larger classes.

One of the apparent objectives of college teaching in many schools is to have all students accomplish given amount of work or to develop a specific attitude. The means of accomplishing these objectives, as well as the interest in the individual student's development of abilities, attitudes and understandings, are given little consideration because of this greater interest by instructors in group achievement. This has unfortunately led to a dearth of research to discover the relationship of class size and the education of the individual members of the class.

There has been in recent years more realization by college faculties that a student's social and emotional development while in college is important. The student's growth in capability to adapt to desirable ways of living is as valuable to himself as it is to society. These valuable intangibles are recognized as being as important as the acquisition of subject matter.

This lack of agreement of college objectives makes it difficult to measure the efficiency of teaching and class size in a general way and would justify research being done in the relationship of class size to specific subjects and the objectives of the course.

At the present time there is a considerable sincere effort being made by colleges and universities in every section of our country to utilize all college resources for the betterment of teaching.

One of the suggested and experimental arrangements for better use of college resources is the change in class size. Interest in class size at the present time is due to the great increase in the educational cost per student, and also to the lack of college teachers. Increased student enrollment and an inadequate supply of teachers will involuntarily lead to large classes.

Unfortunately, until just recently college faculties have been generally reluctant to change their own viewpoint concerning class size

and have not been interested in experimentation in student-faculty class ratio.

The Fund for the Advancement of Education, established in 1951, and the personal interest of many colleges to assure worthwhile educational opportunities, gave impetus for the recent research on class size and efficient teaching.

During the years 1956 and 1957, programs set up by The Fund for the Advancement of Education at the University of Kentucky, University of Connecticut, the University of Nebraska, the University of New Mexico, the University of Oregon, Fordham University, the State University of Washington, and Rensselaer Polytechnic Institute concentrated mainly on class size, although these schools were vitally interested in discovering through their experimental program more effective ways to teach large classes.

The experiment carried on at the State University of Washington to specifically discover the relationship between class size and teaching effectiveness resulted in the finding that class size had no noticeable difference in student achievement. It was noted also that in a medium-sized class of thirty-five, the students were least satisfied with the lectures, the discussions, the instruction and the visual aids used.

The faculty members included in the experimental program at the University of Nebraska realized the economy of time advantage of large classes, but they also saw the value of small classes for flexibility of instruction. The results of the research done at the above institution showed that an able professor could handle as effectively a large class as he could a small one.

The conclusion drawn from the experiment at the University of New Mexico was that the competence of the instructor is a much more important factor than class size or the methods of instruction.

The University of Oregon found no significant difference in the achievement of students when they coupled large lecture sessions once a week with small discussion groups led by the instructor or an assistant as compared to the regular three-day-a-week sessions.

Duke University's program of assigning one half of the students in a beginning course in political science to a large lecture class once a week and to two regular discussion sessions of twenty students each was successful as far as student achievement was concerned, when compared with the other half of the class which met three times a week in small sessions. It is worth while to note that the large lecture sessions had been given audio-visual materials as a supplement to the lecture by a senior professor and also received specially prepared material to help them with the required independent study.

The program developed at Rensselaer Polytechnic Institute of having two lectures and two sessions for specific work on problems each week under

The supervision of the instructor with groups of 80 to 100 students was successful. At Duke University, the research showed that large classes take less of the instructor's time, which was also found to be true at the above institute. More students could have access to the best qualified instructors than when large-sized classes were divided into several smaller groups. It is interesting to note that superior students achieved well in any class, while the average student did better in large classes taught be superior teachers.

Studies done at the University of Connecticut discovered that students disliked the impersonality of large lecture sections. Students evaluated their courses more on the ability of the teacher than on the number of students enrolled in the class. Men students had a preference for discussion sections, while women preferred the lecture method.

The overall conclusions of the experiments carried on by The Fund for the Advancement of Education are that since student achievement was high in large classes as small ones, as shown be early and recent research, class size will be determined by the economical needs of the college and the attitudes of the administration and faculty. Large classes make it possible for students to have the senior professors and the best instructors. Teachers who have had experience with large classes definitely preferred them.[1]

Dr. Frank R. Wilkinson, in his summary of research up to 1955 done in class size, emphasizes the value of the cognizance that the conclusions given in much of research in class size carries little meaning in most practical situations due to the failure of consideration of many inseparable and important variables that enter into the relationship of class size and teaching efficiency.

The following variables, according to Dr. Wilkinson, need to be considered: the definite meaning of size, the correlation of class size and teaching methods, the meaning of student achievement, the role of subject matter, motivation, and the personality of the teacher.[2]

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[1]The Fund for the Advancement of Education, "Better Utilization of College Teaching Resources," May, 1959, 85 pp.

[2]Frank R. Wilkinson, "Class Size in Education," Journal of Higher Education, Vol. XXIX, March, 1958, pp. 149-157.

THE PROCEDURES

The questionnaire, which is given in this section, was sent to 146 institutions of higher education in the western states of California, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming. One hundred five responses were received in the spring of 1959.

The responses to the individual statements that asked for "yes" and "no" answers were tabulated according to the classification of the institutions. The comments made by the respondents were read, analyzed, and digested by the members of the committee.

The following is a condensed version of the questionnaire.

QUESTIONNAIRE

The Relationship of Class Size to Effectiveness of Teaching

Name of School: _____
Position Held: _____
Number of Students Enrolled: _____
Number of Faculty: _____
Date Filled Out: _____

This questionnaire has a twofold purpose:

(1) Survey the policies that govern undergraduate class size in institutions of higher education.

(2) Ascertain the opinion of administrators of and instructors in institutions of higher education concerning the relationship between class size and teaching efficiency at the undergraduate level.

Check each item either yes or no. Your personal comment concerning your thinking on each item will be most valuable.

I. The size of a class is a factor in the character of the relationship between teacher and students.

Yes_____ No_____

Comment:

II. The effectiveness of personal association between student and instructor varies more with the instructor's power of leadership than the size of the class.

Yes_____ No_____

Comment:

III. The ratio of students to instructor should be held constant, and not allowed to fluctuate.

Yes_____No_____

Comment:

IV. The instructor's total teaching load (contact hours) is the significant factor in determining class size.

Yes_____No_____

Comment:

V. The class size affects the students' interest in and ability to see the relationship of the course subject matter to society.

Yes_____No_____

Comment:

VI. The method of the teaching process, whether lecture, discussion, laboratory or lecture demonstration, affects the class size.

Yes_____No_____

Comment:

VII. Given good teaching, a large class (60 or more) with good quality students will equal the achievement of a small class with the same quality students.

Yes_____No_____

Comment:

VIII. Which of the following statements best describe the policy of establishing class size at your institution?

1. Total class contact hours (the number of hours in the classroom)
2. Total student hours (the number of students multiplied by classes by hours met weekly)
3. Student-faculty ratio
4. Preparation hours (the hours spent in preparation for courses; duplicate sections are to be counted once)
5. Clock hours (the hours of composite teaching burden)
6. Level of courses taught
7. Methods of teaching (laboratory versus non-laboratory teaching)
8. Subject matter
9. Non-class duties.

IX. A large class is defined as one having more than
1. 25 students
2. 40 students
3. 75 students
4. Your own definition

X. Have you definite experimental data in your school on class size and teaching efficiency?

Yes_____No_____

(if so, please summarize the data)

XI. Do you wish a copy of the summary of this research?

Yes_____No_____

FINDINGS OF THE STUDY

The two tables below give the data of the number of institutions of higher education that answered the questionnaire on The Relationship of Class Size to Effectiveness of Teaching and the classification of the institutions by type and state.

TABLE I

NUMBER OF QUESTIONNAIRES ANSWERED BY TYPES OF COLLEGES REPRESENTED

University	State College	Private	Colleges of Education and Arts and Sciences	TOTAL
36	20	23	26	105

TABLE II

NUMBER OF QUESTIONNAIRES ANSWERED BY STATES AS REPRESENTED BY TYPES OF COLLEGES

State	University	State College	Private	Colleges of Education and Arts and Science	TOTAL
California	17	8	3	1	29
Idaho	1	1	2	0	4
Montana	1	1	1	2	5
Nevada	6	0	0	0	6
Oregon	4	8	7	31	50
Utah	1	1	3	0	5
Washington	5	1	7	2	15
Wyoming	1	0	0	0	1

Statement I: "The size of the class is a factor in the character of the relationships between teacher and students."

Design of Comments

All schools, except one, returning the questionnaire answered the above statement with an affirmative vote as shown in Table III. However, forty-six of the 105 questionnaires returned added comments to their answer, indicating that although class size was a recognized factor in the character of teacher and student relationships, it was not the sole or the all-important one.

Universities were not interested in the size of the class as a factor in the relationship of teacher and students as noted by their comments. While on the other hand, state, private and other colleges indicated that they thought the size of the class became a very important factor in this relationship and should be considered in building a desirable relationship.

The teacher, more than the class size, was strongly noted in the comments as being an all important factor in efficient and worthwhile relationship between faculty and students. The spirit, the ability and characteristics of the teacher are of prime importance inside and outside of the class room in developing and maintaining effective, worthwhile relationships with students.

Small classes tend to be conducive to better personal teacher-student relationship because of opportunities for class discussions and exchange of knowledge, all of which leads to an atmosphere for efficient, desirable learning. Thus, the type of procedure used in teaching becomes another factor in the development of this relationship.

The type of course was mentioned by many as being another influential factor. Some classes by the nature of the course would need to remain small, while other courses would permit large enrollment.

Comments made about this statement revealed that instructors were cognizant of the importance of teacher and student relationships.

TABLE III

STATEMENT I

"THE SIZE OF THE CLASS IS A FACTOR IN THE CHARACTER OF THE RELATIONSHIPS BETWEEN TEACHER AND STUDENTS."

Number Answering Statement I		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
104	1	35	0	20	1	23	0	25	0

Statement II: "The effectiveness of personal association between students and instructors varies more with the instructor's power of leadership than the size of the class."

Design of Comments

Seventy-nine per cent of the persons answering the questionnaire gave a "yes" statement, showing that they thought the power of leadership of the teacher is an effective factor in student-teacher association. This was very strongly felt by the university faculty members and those of the state colleges as shown in Table IV.

This statement did not bring forth lengthy comments. However, these comments pointed toward a common line of thinking among those making remarks concerning the potency of the personality of the teacher, which was not true of the power of leadership.

The teacher's personality is definitely a determining factor in the effectiveness of the personal association between students and teacher. The personality of the teacher is a very important factor in the type of relationship that exists between the instructor and the students, regardless of the size of the class. An effective personality projects to any size class. However, the size of the class may make for greater or lesser accessibility and contact between the student and the instructor.

Concerning the power of leadership of the instructor resulting in effective teacher and student relationship, the remarks showed a lack of complete clarity of thinking and a lack of the ability to define specifically the term "power of leadership." This inability and mixed thinking are due to a cognizance that leadership is composed of many facets, such as time, energy and willingness of the teacher.

TABLE IV

STATEMENT II

"THE EFFECTIVENESS OF PERSONAL ASSOCIATION BETWEEN STUDENTS AND INSTRUCTORS VARIES MORE WITH THE INSTRUCTOR'S POWER OF LEADERSHIP THAN THE SIZE OF THE CLASS."

Number Answering Statement II		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
81	11	32	2	17	1	18	2	14	6

Statement III: "The ratio of students to instructor should be held constant and not allowed to fluctuate."

Design of Comments

A vast majority, over ninety-nine per cent of those answering this statement, were of the opinion that the ratio should not be held constant. Schools that employ a definite ratio formula made no comments concerning its effectiveness and stability. However, faculty members of the other schools thought this idea of holding the ratio constant would be practically and economically impossible, as well as unrealistic and impractical. The ratio should vary according to the nature of the instruction, the subject and the ability of the instructor. A ratio, per se, does not lend itself to people, nor can a ratio be held constant in schools in which there is a fluctuating enrollment. New teaching methods and devices, such as closed-circuit television, group processes, and audio-visual aids, might justify a change in the ratio.

TABLE V

STATEMENT III

"THE RATIO OF STUDENTS TO INSTRUCTOR SHOULD BE HELD CONSTANT AND NOT ALLOWED TO FLUCTUATE."

Number Answering Statement III		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
104	1	35	0	20	1	23	0	25	0

Statement IV: "The instructor's total teaching load (exact hours) is the significant factor in determining class size."

Design of Comments

As indicated on Table VI, there was no consensus among the educators answering this statement. California schools said "no." State Colleges were divided in their thinking, while the greatest variance was by the members of the university faculties. The total ratio was over 3 to 1 in favor of the negative point of view.

Remarks clearly showed that there is no one single significant factor in determining class size. The following factors were enumerated as being of significant value, none being of more importance than others:

(1) readers and teaching assistants
(2) effective instruction
(3) standard of student's work
(4) amount of time for class preparation
(5) the number of different preparations made by the instructor
(6) methods of instruction
(7) the nature of the course (laboratory, seminar, lecture, studio)
(8) the type of the course
(9) whether the course is graduate of undergraduate level
(10) the physical condition of the classroom, such as the amount of equipment
(11) the quality of the students

Smaller schools stated the value of having the instructor be the reader of his own papers which would influence the class size.

TABLE VI

STATEMENT IV

"THE INSTRUCTOR'S TOTAL TEACHING LOAD (EXACT HOURS) IS THE SIGNIFICANT FACTOR IN DETERMINING CLASS SIZE."

Number Answering Statement IV		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
21	70	3	29	4	14	6	13	8	14

Statement V: "The class size affects the student's interest in and ability to see the relationship of the course subject matter to society."

Design of Comments

Table VII shows that there was a definite divided opinion as forty-four said "yes," and forty-two said "no." Nine ...en respondents did not answer this question.

The remarks were directed to the thought that the teacher himself was the most important factor to lead students to see the functional and practical relationships between a course and society.

Other factors were mentioned as having a bearing on the student's desire and ability to see an application of a course to every-day problems and living. These were the following:

(1) the intelligence of the students
(2) the effectiveness of the teacher
(3) the age of the student
(4) the level of the subject
(5) the nature of the subject
(6) the objectives of the course

Small colleges commented that smaller classes result in students receiving a much more functional value from a course than was possible in larger classes.

TABLE VII

STATEMENT V

"THE CLASS SIZE AFFECTS THE STUDENT'S INTEREST IN AND ABILITY TO SEE THE RELATIONSHIP OF THE COURSE SUBJECT MATTER TO SOCIETY."

Number Answering Statement		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
44	42	15	15	10	6	9	8	10	13

Statement VI: "The method of the teaching process, whether lecture, discussion, laboratory or lecture demonstration, affects the class size."

Design of Comments

This was one of the most frequently answered questions. The respondents from small and large colleges thought the same about this statement. (Refer to Table VIII.)

There were only two negative responses, which indicated that method is a decisive factor in class size. Class size was the reason for the two negative answers. Interestingly, it is the class size that affects the method, and not the method that affects the class size.

By the remarks, a very definite attitude was shown that method is a potent and decisive factor in teaching. It was interesting to note that a definite conflict exists as to the specific method which is best adapted to class size. Following are representative statements.

"You can't use certain methods in large classes."

"I believe method to be the key factor in determining the class size. Discussion, true discussion, is certainly not feasible with more than 20, ideally less than 10. Lecture, pure lecture, is practical for very large group (100 plus) providing all can see and hear the speaker adequately."

"Don't see how discussion can be profitably carried on in a class over 50 students.

"But not as much as people are inclined to think. At the Harvard Business School I have observed classes with 100 students where the courses are built upon student discussion method almost exclusively."

"Discussion probably lends itself less readily to large classes..."

"Classes taught wholly by the lecture method can be much larger than those in which the discussion method is used. Laboratory or lecture demonstration classes may also be large."

"I believe that discussion groups should not exceed 35. The accommodations in the classroom and the nature of the subject also affect learning."

Although method is a decisive factor, the instructor and the potentialitites of the students are still very important factors in determining effective class size.

TABLE VIII

STATEMENT VI

"THE METHOD OF THE TEACHING PROCESS, WHETHER LECTURE, DISCUSSION, LABORATORY OR LECTURE DEMONSTRATION, AFFECTS THE CLASS SIZE."

Number Answering Statement VI		University		State College		Private		Colleges of Education and Arts and Sciences	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
101	2	34	0	19	1	23	0	25	1

Statement VII: "Given good teaching a large class (60 or more) with good quality students will equal the achievements of a small class with the same quality students."

Design of Comments

As seen in Table II, more respondents, twice as many, indicated that the statement was true rather than untrue. The comments showed that the statement was indeed a controversial one, due to the many variables needed to be considered.

Many of the comments elaborated on specific attitudes concerning the definition of achievement and whether or not the same standard of achievement should be expected of a large class as of a small class.

There was a consensus in the comments that achievement is difficult to define, as is good teaching.

The personal qualities of the teacher, his attitude about personal contact with students in the classroom and in conference are factors that enter into the development of "good teaching."

The level, objectives, and requirements of a course, as well as the subject matter content, are variables in a class even when there is good teaching.

Method is another variable that has to be considered in the above statement. Term papers and special studies could not be required in large classes without readers or assistants. If discussion and supervision lead to learning, then the small class is more effective. Laboratory classes using equipment naturally necessitate small enrollments.

The student is an important factor, too. Superior students will achieve more when challenged. The human factor with students is lost in a large class, since there is little, if any, time for individual help. Students have little opportunity for participation in large classes, which could hinder achievement and good teaching. Then, it is to be remembered that instructors differ as to the amount and standard of achievement expected of students.

TABLE IX

STATEMENT VII

"GIVEN GOOD TEACHERS A LARGE CLASS (40 OR MORE WITH GOOD QUALITY STUDENTS WILL ADMIT THE ACHIEVEMENT OF A SMALL CLASS WITH THE SAME QUALITY STUDENTS."

Number Answering Statement VII	University		State College		Private		Colleges of Education and Arts and Sciences	
	Yes	No	Yes	No	Yes	No	Yes	No
	56	28	19	12	11	4	11	7	15	5

Statement VIII: "Which of the following statements best describe the policy of establishing class size at your institution?"

1. Total class contact hours (the number of hours in the classroom)
2. Total student hours (the number of students multiplied by classes by hours met weekly)
3. Student-faculty ratio
4. Preparation hours (the hours spent in preparation for courses, duplicate sections are to be counted once)
5. Clock hours (the hours of composite teaching burden)
6. Level of courses taught
7. Methods of teaching (laboratory versus non-laboratory teaching)
8. Subject matter
9. Non-class duties

Design of Comments

There was a range of 12 to 68 votes that indicated there was little real definite idea about what criteria established a policy for class size. (See Table 4.) There were few comments, which was another indication of the lack of true decision concerning the bases for the establishment of a policy for class size. Or the above criteria was somewhat exhaustive.

The respondents recognised that the method of teaching, laboratory versus non-laboratory teaching, was the most valid factor for consideration when determining a policy for class size. The level of courses taught and the subject matter of the course were considered to about of equal importance.

Non-class duties, total student hours, total class contact hours, preparation and composite teaching hours were not considered as important factors.

The California State College Staffing Formula determines the size of each course in the State Colleges of California.

It was indicated by several respondents that faculty manpower could be utilised more wisely, and that more consideration should be given to the nature of purposes of learning, critical and imaginative thinking.

Space for teaching equipment, the size of the class room, and the extent of teaching facilities were mentioned in the comments as factors for consideration.

TABLE X

STATEMENT VII

NUMBER ANSWERING STATEMENT VIII AS TO
TYPE OF COLLEGES REPRESENTED

Type	STATEMENTS (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
University	2	2	10	3	9	17	24	17	3
State College	3	3	7	1	2	8	13	8	2
Private	5	4	4	4	1	11	15	10	5
Colleges of Education and Arts and Science	8	6	3	5	4	6	16	12	2
TOTAL	18	15	24	13	16	42	68	47	12

Statement IX: "A large class is defined as one having more than
1. 25 students
2. 40 students
3. 75 students
4. Your own definition"

Design of Comments

Table XI shows that an enrollment of forty students is thought to be a large class enrollment by a plurity of the respondents. This was very definitely the thinking of members of the teaching staffs of colleges of education, and arts and sciences.

Again, comments that the nature of the course, the subject matter content, and the potentialities of the student made a concrete, specific definition impossible and led to the respondents' own definitions.

TABLE XI

STATEMENT IX

NUMBER ANSWERING STATEMENT IX BY
TYPES OF COLLEGES REPRESENTED

Type	25 Students	40 Students	75 Students	Own Definition
University	3	12	13	8
State College	2	9	10	3
Private	4	10	9	1
Colleges of Education and Art and Science	5	16	1	3
TOTAL	14	47	33	15

Statement A: "Have you definite experimental data in your school on class size and teaching efficiency?"

Design of Comments:

There has been very little specific experimentation done. Only seven persons out of one hundred answering the statement had done any type of experimentation concerning the above statement.

San Jose State College, San Jose, California, The State Department of California, and Brigham Young University, Provo, Utah, have a specific evaluating scale.

Three colleges indicated that they were carrying on experiments of class size and teaching efficiency in 1959. The School of Business Administration of the University of Nevada has completed a study carried on in its own department. Research being carried on at Montana State University, although not complete, appears to show that a large class is not detrimental to effective teaching. An experiment carried on at Oregon Technical Institute, Klamath Falls, Oregon, shows comparable results to the preceding statement.

There was a conviction that when student achievement is measured by objective data, class size is not a factor.

GENERALIZATIONS AND RECOMMENDATIONS

A summary of the generalizations resulting from the findings of the questionnaire on "The Relationship of Class Size to Effectiveness of Teaching" is given below.

1. Close academic relationship between students and the instructor is most valuable.

2. The teacher's personality is an important factor in teaching efficiency and desirable teacher-student relationship.

3. There is no evidence of concerted effort on the part of colleges to determine the relationship between class size and teaching efficiency.

4. There are so many variables that have to be considered and controlled in determining teaching efficiency that this area of teaching can not be measured with any high validity.

5. Colleges with large enrollments tend to favor large classes. This may be due to the only existing means now possible to handle large enrollments. Large schools mentioned closed circuit television as one method of handling large classes.

6. Colleges with small enrollments favor small classes, and consider this an advantage to students' academic achievement.

7. Although there is much thinking about desirable class size, there is little purposeful action accompanying this thinking.

8. Even though there is a high degree of consensus that the teacher's personality is an important factor in the class room for teaching efficiency, there is a dichotomy as to the importance of the teacher's personality outside the class room at conferences and office hours.

9. There is no indication that the student's desire for large versus small classes is an important factor in determining class size.

10. The physical conditions of the class room is not an important factor in class size and teaching efficiency.

Recommendations

The following are the recommendations made for this study of the relationship of class size to effectiveness of teaching.

1. There is a definite need for better communication between college faculty members and the administration within a college as to just what are the variables involved in teaching efficiency and class size. Similar communication is needed between colleges.

2. There is a need for a comparative index of class size that is easy to calculate and which has significance, clearness, and direct relationships. (Refer to California Staffing Formula available from California State Department of Education, Sacramento, California.)

3. Experiments with class size, methods and teacher differences should be carried on in colleges to discover important variables and various relationships.

4. More research is needed to ascertain the relationship of class size to the achievement of the individual student.

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